WHAT IS CLAIMED IS:

1. A method for reducing drift in an artificial olfaction device having an array of sensors, said method comprising:

contacting said array of sensor with an analyte at a first temperature to produce a first response;

contacting said array of sensor with said analyte at a second temperature to produce a second response; and

subtracting the first response from the second response thereby reducing drift in said sensor array.

2. The method of claim 1, wherein at least one sensor in said array of sensors in selected from the group consisting of a conducting and nonconducting regions sensor, a SAW sensor, a quartz microbalance sensor, a conductive composite sensor, a chemiresitor, a metal oxide gas sensor, an organic gas sensor, a MOSFET, a piezoelectric device, an infrared sensor, a sintered metal oxide sensor, a Pd-gate MOSFET, a metal FET structure, a electrochemical cell, a conducting polymer sensor, a catalytic gas sensor, an organic semiconducting gas sensor, a fiber optical chemical sensor, a solid electrolyte gas sensors, and a piezoelectric quartz crystal sensor.

3. The method of claim 2, wherein at least one sensor is a conducting and nonconducting regions sensor.

4. The method of claim 2, wherein at least one sensor is a SAW sensor.

5. The method of claim 1, wherein said analyte and said sensor array are equilibrated at said first temperature.

6. The method of claim 1, wherein said analyte and said sensor array are equilibrated at said second temperature.

7. The method of claim 1, wherein the difference between said first temperature and said second temperature is between about 5°C and about 150°C.

8. The method of claim 7, wherein the difference between said first temperature and said second temperature is between about 2°C to about 70°C.

9. The method of claim 1, wherein said artificial olfaction device comprises two arrays of sensors.

10. The method of claim 1, wherein said artificial olfaction device is a handheld device.

11. A sensor module configured for external mounting on a sensing apparatus for detecting an analyte in a fluid, said sensor module comprising:

a casing sized and configured to be received in a receptacle of the sensing apparatus;

at least two sensor to provide a distinct response when exposed to one or more analytes; and

an electrical connector configured to be releasably engageable with a mating electrical connector of the sensing apparatus when the sensor module is received in the receptacle, said electrical connector transmitting the characteristic signals from the at least two sensors to the sensing apparatus.

12. The sensor module of claim 11, wherein said sensor module comprises a memory device.

13. The sensor module of claim 11, wherein at least one sensor in said array of sensors in selected from the group consisting of a conducting and nonconducting regions sensor, a SAW sensor, a quartz microbalance sensor, a conductive composite sensor, a chemiresitor, a metal oxide gas sensor, an organic gas sensor, a MOSFET, a piezoelectric device, an infrared sensor, a sintered metal oxide sensor, a Pd-gate MOSFET, a metal FET structure, a electrochemical cell, a conducting polymer sensor, a catalytic gas sensor, an organic semiconducting gas sensor, fiber optical chemical sensor, a solid electrolyte gas sensors, and a piezoelectric quartz crystal sensor.

14. The sensor module of claim 13, wherein at least one sensor is a conducting and nonconducting regions sensor.

15. The sensor module of claim 13, wherein at least one sensor is a SAW sensor.

16. The sensor module of claim 11, wherein said sensing apparatus is a handheld device.

17. A sensing device for detecting an analyte, said device comprising:

a housing;

a sensor module mounted externally on said housing and incorporating an array of sensors, each of said sensors providing a different response in the presence of said analyte;

a monitoring device mounted on said housing and configured to monitor said responses of the array of sensors incorporated in the sensor module, and further configured to produce a plurality of sensor signals; and

an analyzer mounted on said housing and configured to analyze said plurality of sensor signals to identify said analyte.

18. The sensor device according to claim 17, wherein said sensor module is capable of automatic physical movement.

19. The sensor device according to claim 17, wherein said sensor module comprises at least two pneumatic vapor paths and at least two sensor arrays.

20. The sensor device according to claim 17, wherein said response is a member selected from the groups consisting of resistance, impedance, mechanical capacitance, inductance, frequency, magnetic and optical.

21. The sensor device according to claim 17, wherein at least one sensor is selected from the group consisting of inorganic metal oxide semiconductors, intrinsically conducting polymers, mass sensitive piezoelectric sensors, surface acoustic wave sensors and nonconducting and conducting regions sensors.

22. The sensor device according to claim 17, wherein said analyzer comprises a comparison algorithm wherein said comparison is performed using a pattern recognition algorithm which is a member selected from the group consisting of principal component analysis, Fisher linear discriminant analysis, soft independent modeling of class analogy, K-nearest neighbors, and canonical discriminant analysis.

23. A sensing device for detecting an analyte in a fluid, said device comprising:

a first sensor element having a first sensor array for producing a response in the presence of said analyte;

a second sensing element having a second sensor array for referencing said system;

a computer coupled to said first and said second sensing elements having a resident algorithm.

24. The sensing device according to claim **23**, wherein said first sensing element is physically located distinctly from said second sensing element.

25. The sensing device according to claim **24**, wherein said second sensing element has attached thereto a pasivation layer.

26. The sensing device according to claim **25**, wherein said pasivation layer comprises a material that is a member selected from the group consisting of SiO_2 and SiO_2 based films.

27. The sensing device according to claim **26**, wherein said SiO_2 based film is a member selected from the group consisting of thermal oxides, silane, SiH_4, testraethoxysilane, $Si(OC_2H_5)_4$, silicate glasses, and spin on glass.

28. The sensing device according to claim **24**, wherein said first sensing element is in a first sample chamber and said second sensing element is in a second sample chamber.

29. The sensing device according to claim **24**, wherein said second sensing element has attached thereto a porous membrane layer.

30. The sensing device according to claim **29**, wherein said porous membrane layer limits diffusion of said analyte.

31. The sensing device according to claim **24**, wherein said second sensing element is a reference element and sensing element is temperature controlled.

32. A method for mapping an x-y surface for detection of an analyte, said method comprising:

moving in tandem at least two sensor arrays separated by a distance "d" across an x-y surface to produce a plurality of responses; and

analyzing said responses and thereby mapping the x-y surface for detection of said analyte.

33. A parallel independent sensor array device for detecting a plurality of test samples independently and simultaneously, said parallel independent sensor array device comprising:

a parallel matrix of sensors to produce a plurality of responses each of said plurality of responses generated from a corresponding plurality of test samples; and

an electrical measuring apparatus to simultaneously detect each of said plurality of responses.

34. The device of claim **33**, further comprising a computer coupled to each of said sensors having a resident algorithm.

35. The device of claim **33**, wherein each of said plurality of responses is generated from a member selected from the group consisting of antibiotics, catalysts, drugs, biomolecule binding efficiencies, nucleic acid hybridizations, ligand-ligand interactions, biomolecule interactions, and drug candidates.